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March 12, 1999

Mr. Dale N. Hatfield  
Chief, Office of Engineering and Technology  
Federal Communications Commission  
2000 M Street, NW, Room 480  
Washington, DC 20554

RECEIVED  
MAR 12 1999  
FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

RE: Final Disruption Report

Dear Mr. Hatfield:

Pursuant to the requirements of the Commission's Order in CC Docket 91-273, released February 27, 1992, BellSouth Telecommunications, Incorporated submits a Final Service Disruption Report for a service outage that occurred on February 12, 1999.

The attached final report completes our response on the February 12, 1999 outage. It includes an update of the information previously provided in the 120-minute Initial Service Disruption Report that was sent to the Commission's Watch Office on February 12, 1999.

If you have any questions concerning this report, please contact the undersigned.

Sincerely,



Ben G. Almond  
Vice President-Federal Regulatory

Attachment

cc: Robert Kimball

MAR 12 1999

## FINAL SERVICE DISRUPTION REPORT

Federal Communications Commission  
Office of Secretary

This Final Service Disruption report is filed by BellSouth Telecommunications Inc., in accordance with both the First and Second Report and Order Amendment of Part 63.100 of the Federal Communications Commission's rules. A 120-minute Initial Service Disruption Report for this New Orleans, Louisiana outage was filed with the FCC Watch Officer on February 12, 1999.

## GEOGRAPHIC AREA AFFECTED:

The facility affected during the outage serves New Orleans, Louisiana (LATA 490).

## DURATION OF OUTAGE:

This outage occurred on Friday, February 12, 1999. It began at 6:05AM ET and ended at 7:15AM ET, for a total duration of 1 hour 10 minutes.

## ESTIMATED NUMBER OF CUSTOMERS AFFECTED:

The facility involved in this outage potentially affected 84,859 customers.

There were 9 PSAPs isolated during this event that potentially could have affected 137,949 E911 customers.

## TYPES OF SERVICE AFFECTED:

This facility failure impacted Intra-Office, Inter-Office, Intra-LATA, Inter-LATA, Operator Services and 911 service.

The failed New Orleans-Main FT2000 terminal is one node of an 8-node OC48 ring that was designed to provide outlying areas access to both LATA tandems (Primary LATA tandem: NWORLAMA0GT, New Orleans-Main, alternate LATA tandem: NWORLAMT01T, New Orleans-Metairie).

Specifically, New Orleans-Main tandem toll calls trying to terminate to the Covington, Slidell, Mandeville, Bush, Pine, Angie and LaCombe central offices were impacted. BellSouth's Norco Main end office had a local trunk group isolated from the Luling-Hahnville central office, one Directory Assistance trunk group and two Operator Services trunk groups out of service for the duration of the event.

Relative to the 911 portion of this outage, the 9 PSAPs isolated during this facility outage were the Bogalusa Police, Slidell Police, Pearl River Police, Tangipahoa, Washington Parish Sheriff, Franklinton Police, St. Tammany Parish Sheriff, Covington Police, and the Mandeville Police.

#### ESTIMATED NUMBER OF BLOCKED CALLS:

The Initial Service Disruption Report noted "Estimated Number of Blocked Calls" as 6,001. Further investigation determined approximately 9,000 calls were blocked during this service failure.

#### APPARENT OR KNOWN CAUSE OF THE INCIDENT:

Service was lost when a hardware failure occurred on the 1East optical transmitter of the New Orleans-Main FT2000 terminal. Due to an obscure defect in Lucent's 7.2.3 software release, this transmitter defect raised an erroneous alarm in the opposite direction optical receiver (the receiver was not actually defective but the software improperly marked it as failed). Because both node transmission directions were thereby marked as failed, service into and out of this node was unavoidably lost.

#### ROOT CAUSE:

The trigger for the service outage was the hardware failure of the Lucent 1 East optical transmitter.

The actual service loss occurred when a software defect in Lucent's Release 7.2.3 erroneously marked the opposite direction 1West receiver as defective shortly after the 1East optical transmitter failed.

#### METHODS USED TO RESTORE SERVICE:

Surveillance personnel received alarms at 6:05AM and an internal ticket was then dropped. Around 6:45AM EST, the problem was determined to be the FT2000 terminal in the New Orleans-Main central office. At 6:55AM EST BellSouth Tier Two Technical Support joined the service restoration effort and attempted to restore the failed 1 East transmitter by reseating it. Despite repeated attempts, the resealed transmitter would not restore and remained failed. At 7:15AM EST, service was restored when the 1 West receiver was resealed.

Immediately following the service restoration, the suspect transmitter and receiver modules were replaced by a field technician in the New Orleans-Main central office using normal in-service maintenance procedures that were not service affecting.

## STEPS TO PREVENT RECURRENCE:

BellSouth and Lucent had recently discovered the defect in Lucent's Release 7.2.3 and Lucent has been vigorously addressing its correction. Release 7.2.4 has an estimated release date of March 15, 1999.

Further deployment of Release 7.2.3 in BellSouth had already been officially halted before this service outage occurred because of other issues identified with that release.

All Release 7.2.3 nodes in BellSouth will be upgraded to Release 7.2.4 by Lucent.

## EVALUATION OF EFFECTIVENESS AND APPLICATION OF NRC RECOMMENDATIONS AND BEST PRACTICES

Having reviewed the Network Reliability Council's Compendium of Technical Papers, there are no best practices for this particular hardware failure on transport equipment.

### Additional Information about Service Disruption

Date of Incident: 2/12/1999

Location of Incident: New Orleans, Louisiana

1. Has the root cause occurred before on this particular system? (If yes, explain) NO

2. Is there any (facility) diversity element in this system? (If yes, explain) NO

3. Is the 911 system tied to a tandem? YES, New Orleans-Franklin (NWORLAFRCG0)

If so, did tandem switch go out? The tandem switch did not go out of service.

4. Was the role of the PSAP(s) lost? Yes, 9 PSAPs were isolated and could not be rerouted during this service disruption.

Could the PSAP(s) function? No

PSAP NAME	ACCESS LINES
Bogalusa Police	7,343
Slidell Police	14,583
Pearl River Police	679
Tangipahoa	43,982
Washington Parish Sheriff	9,677
Franklinton Police	2,191
St. Tammany Parish Sheriff, Covington Police, Mandeville Police	59,494
<b>Total Potential 911 Customers Affected</b>	<b>137,949</b>

5. Were there any intercept (special announcement) messages available? No  
(If yes, what kind).

6. Were any major emergencies missed because of the outage? No